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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,398	07/18/2003	John Weldon Gammon	9314-48	4681
20792	7590	06/03/2005	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			DOAN, PHUOC HUU	
PO BOX 37428			ART UNIT	PAPER NUMBER
RALEIGH, NC 27627			2687	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/622,398	Applicant(s) GAMMON ET AL.	
	Examiner PHUOC H DOAN	Art Unit 2687	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 26, 30 and 32-34 is/are rejected.
- 7) ☒ Claim(s) 12-25, 27-29, 31 and 35-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-2, 5-11, and 30** are rejected under 35 U.S.C. 102(e) as being anticipated by **Komura (US Pub No: 2004/0023697)**.

As to claim 1, Komura discloses a mobile terminal comprising (Fig. 11): a housing; an electronic circuit positioned in the housing (implicit); a first speaker (Fig. 11, item 2a) positioned adjacent a first side of the electronic circuit (col. 8, par. [0170-0171]; and a second speaker (Fig. 11, item 2b) positioned adjacent the first speaker on the first side of the electronic circuit (col. 8, par. [0170-0172]).

As to claim 2, Komura further discloses the mobile terminal of claim 1, wherein the first speaker comprises a receiver speaker and the second speaker comprises a micro-speaker (col. 1, par. [0003]).

As to claim 5, Komura further discloses the mobile terminal of claim 1 further comprising a grommet positioned in the housing that is configured to receive the first speaker and the second speaker, wherein the first speaker and the second speaker are positioned in the grommet (col. 10, par. [0200-0201]).

As to claim 6, Komura further discloses the mobile terminal of claim 5 wherein the grommet is configured to provide a seal between a front face of the first speaker and a back face of the first speaker and between a front face of the second speaker and a back face of the second speaker (col. 6, par. [0131], and [0136]).

As to claim 7, Komura further discloses the mobile terminal of claim 6 wherein the housing comprises a front face including a keypad (Fig. 1, item 12) and an earpiece (Fig. 1, item 13) and wherein the first speaker and the second speaker are positioned between the electronic circuit and the front face and wherein the electronic circuit comprises a printed circuit board (col. 12, par. [0238]), the mobile terminal further comprising a first passageway acoustically coupling the front face of the first speaker to the earpiece (Fig. 5, items 2b, and 14, col. 7, par. [0147-0150]).

As to claim 8, Komura further discloses the mobile terminal of claim 7 further comprising a seal between a first face of the grommet and the front face of the housing and a seal between a second face of the grommet and the first side of the printed circuit board (col. 9, par. [0186-0189]).

As to claim 9, Komura further discloses the mobile terminal of claim 7 further comprising a second passageway acoustically coupling the front face of the second speaker to an opening in a face of the housing remote from the earpiece (See Fig. 10, col. 8, par. [0166-0169]).

As to claim 10, Komura further discloses the mobile terminal of claim 9 wherein the grommet defines the first and second passageways (Fig. 10, col. 8, par. [0166-0169]).

As to claim 11, Komura further discloses the mobile terminal of claim 9 wherein the opening remote from the earpiece is positioned on a side face of the housing (col. 8, par. [0166-0169]).

As to claim 30, Komura further discloses the mobile terminal of claim 5 wherein the grommet comprises: a first member configured to receive the first speaker and to provide a seal between a front face of the first speaker and a back face of the first speaker (col. 9, par. [0190-0192]); and a second member configured to receive the second speaker and to provide a seal between a front face of the second speaker and a back face of the second speaker (col. 10, par. [0097-0099]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **3-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Komura in view of **Kim (US Pub No: 2003/0095680)**.

As to claim 3, Komura does not specific disclose the mobile terminal of claim 2, wherein the receiver speaker has a DC resistance at least about two times a DC resistance of the micro-speaker.

However, Kim discloses the mobile terminal of claim 2, wherein the receiver speaker has a DC resistance at least about two times a DC resistance of the micro-

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speaker (Fig. 4, col. 2, par. [0031-0032]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the DC resistance of the micro-speaker as taught by Kim to the system of Komura in order to adjust the voice current.

As to claim 4, this claim is rejected for the same reason as set forth in claim 3.

5. Claim **26** is rejected under 35 U.S.C. 103(a) as being unpatentable over Komura in view of **Barabolak (US Patent No: 5,201,069)**.

As to claim 26, Komura does not specific disclose the mobile terminal of claim 9 further comprising: at least one spring connector that electrically couples the first speaker to the first side of the electronic circuit; and at least one spring connector that electrically couples the second speaker to the first side of the electronic circuit.

However, Barabolak discloses the mobile terminal of claim 9 further comprising: at least one spring connector that electrically couples the first speaker to the first side of the electronic circuit (col. 3, lines 1-15); and at least one spring **"Fig. 2, items 213, 216"** connector that electrically couples the second speaker to the first side of the electronic circuit (col. 3 through col. 4, lines 16-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the spring connector as taught by Barabolak to the system of Komura in order to hold the printed circuit board.

6. Claim **32** is rejected under 35 U.S.C. 103(a) as being unpatentable over Komura in view of **Saiki (US Pub No: 2003/0003879)**.

As to claim 32, Komura does not specific disclose the mobile terminal of claim 1 wherein the first speaker and the second speaker have a diameter of from about 10 millimeters (mm) to about 20 mm.

However, Saiki discloses the mobile terminal of claim 1 wherein the first speaker and the second speaker have a diameter of from about 10 millimeters (mm) to about 20 mm (col. 5, par. [0094]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a diameter as taught by Saiki to the system of Komura in order to reduce the size of dynamic speakers.

7. Claim **33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Komura in view of **Asami (US Pub No: 2002/0042287)**.

As to claim 33, Komura does not specific disclose the mobile terminal of claim 1 further comprising; a receiver that receives encoded audio signals from a wireless communications network; and a controller that decodes the received audio signals and selectively provides the decoded audio signals to the first and/or the second speaker.

However, Asami discloses the mobile terminal of claim 1 further comprising (Fig. 1) (col. 1, par. [0015-0018]); a receiver that receives encoded audio signals from a wireless communications network; and a controller that decodes the received audio signals and selectively provides the decoded audio signals to the first and/or the second speaker (col. 3, par. [0029-0037]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a

receiver that receives encoded audio signal as taught by Asami to the system of Komura in order to control the sound from first and second speakers.

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komura in view of **Gabr (US Patent No: 3,922,488)**

As to claim 34, Komura discloses a speaker assembly comprising (Fig. 12): wherein the grommet is configured to provide a seal between a front face of the first speaker and a back face of the first speaker and between a front face of the second speaker and a back face of the second speaker (col. 6, par. [0131], and [0136]). However, Komura do not specific disclose a grommet defining adjacent first and second receiving chambers; a first speaker positioned in the first receiving chamber; a second speaker positioned in the second receiving chamber.

Gabr discloses a grommet defining adjacent first and second receiving chambers (col. 1, lines 13-30); a first speaker positioned in the first receiving chamber (col. 7, lines 13-68); a second speaker positioned in the second receiving chamber (col. 7 through col. 8, lines 25-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a grommet adjacent receiving chamber as taught by Gabr to the system of Komura in order to reduce the effect of acoustic echoes.

Allowable Subject Matter

9. Claims **12-25, 27-29, 31, and 35-37** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 12, the prior art of record do not specific disclose the mobile terminal of claim 9, wherein the first passageway includes a first high frequency forward tuning volume adjacent the front face of the first speaker and wherein the second passageway includes a second high frequency forward tuning volume adjacent the front face of the second speaker, the mobile terminal further comprising: a first low frequency back tuning volume adjacent the back face of the first speaker; and a second low frequency back tuning volume adjacent the back face of the second speaker.

As to claim 27, the prior art of record do not disclose the mobile terminal of claim 9 wherein the opening remote from the earpiece has an area of less than about 10 square millimeters (mm.sup.2).

As to claim 28, the prior art of record do not disclose the mobile terminal of claim 9 further comprising a filter in the opening remote from the earpiece.

As to claim 31, the prior art of record do not disclose the mobile terminal of claim 30 wherein the first and second members comprise a unitary member.

As to claim 35, the prior art of record do not disclose the speaker assembly of claim 34 wherein the grommet is further configured to define a first acoustic passageway extending from the first chamber to an outer face of the grommet and a

second acoustic passageway extending from the second chamber to an outer face of the grommet at a location remote from the first acoustic passageway.

As to claim 37, the prior art of record do not disclose the speaker assembly of claim 34 wherein the grommet comprises a unitary elastomeric member.

Dependent claims **13-25, 29, and 36** are rejected for the same reason.

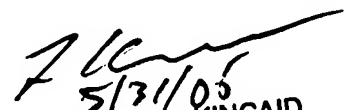
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUOC H DOAN whose telephone number is 571-272-7920. The examiner can normally be reached on 9:30 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LESTER G KINCAID can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phuoc Doan


5/31/05
LESTER G. KINCAID
PRIMARY EXAMINER